

REMARKS

I. Introduction

In response to the Office Action dated August 1, 2007, Applicants note that claims 1-3, 17, 18, 20, 21, 23, 24, 26, 27, 29-31, 33, 34, 36, 37, 39, 40 and 42 are pending in the above-referenced application. Claims 4-16, 19, 22, 25, 28, 32, 35, 38 and 41 have been canceled. Claims 1-3, 17 and 30 are rejected and claims 18, 20, 21, 23, 24, 26, 27, 29, 31, 33, 34, 36, 37, 39, 40 and 42 are objected to. In view of the foregoing amendments and the following remarks, Applicants respectfully submit that all pending claims are in condition for allowance.

II. Claim Rejections Under 35 U.S.C. §§ 102 and 103

Claim 1 stands rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by Evans (U.S. Patent No. 6,954,046). Claims 2-3, 17 and 30 have been rejected under 35 U.S.C. § 103, as allegedly being unpatentable over Evans in view of Yamazaki et al. (U.S. Patent No. 6,233,195). Applicants traverse these rejections for at least the following reasons.

Claim 1 is directed to a semiconductor device comprising a first memory unit having a function as a main memory and a plurality of page memory units obtained by partitioning a second memory unit which is different from the first memory unit and has a function as a cache memory such that each of the page memory units has a storage capacity of several kilobytes.

Evans discloses in Fig. 1, a cache 110 corresponding to the second memory unit of the present invention and a main memory 130 to the first memory unit of the present invention. However, the cache 110 of Evans refers to cache lines each generally having a memory capacity

of a few dozens bytes. This is different from the present invention having the page memory units which are obtained by partitioning the second memory unit and each of which has a storage capacity of several kilobytes.

As shown in Fig. 2, it is necessary for Evans to manage a main memory per page by using TLB (translation lookaside buffer) 202 constituting MMU (memory management unit) 140. On the other hand, the present invention constitutes the second memory unit without TLB and MMU. Note that Evans discloses that an allocation of a page memory allows a quick access to the memory. However, it merely means that the TLB 202 included in the MMU 140 does not make a mistake. Even if a desired data is held in the page memory, the data not incorporated into the cache 110 is required to be re-filled from the main memory 130 to the cache 110. The access in this case is not fast.

On the other hand, in the present invention, the memory itself corresponding to the cache is the second memory unit and hence, the access to an allocated memory unit is always fast. From the foregoing, it is clear that the invention of claim 1 is not the same as that of Evans.

Accordingly, as anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Cor p.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), and Evans fails to disclose at least the above described elements, it is clear that Evans does not anticipate claim 1.

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*,

819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as independent claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all claims dependent thereon are also patentable. In addition, it is respectfully submitted that the dependent claims are patentable based on their own merits by adding novel and non-obvious features to the combination.

III. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited.

If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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